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SMITH & MONROE & GRAY ENGINEERS
MEMORANDUM 8-169

TO: Richard Cooke
Ash Grove Cement West, Inc.

FROM: Stephen Rinella
Smith & Monroe & Gray Engineers

DATE: September 20, 1990

RE: Seattle Modernization
Site Drainage

Recently we received feedback (copy of some correspondence attached) from Klein Consulting Engineers regarding conclusions that they have reached now regarding the proposed drainage conditions in Seattle. The conclusions are not good.

In general, due to the pond settling tests by Nate, and review of the recent work by Meriwether Leachman Associates, and based on comments by Nate that "the pond has overflowed at least twice in the past two years", they have now concluded that we need considerably more volume, and therefor area, of drywell.

The plan area required for a rock filled drywell system, using the parameters established at the existing pond area, is at least 230 feet by 230 feet, and this does not consider the additional runoff due to the development of planned improvements (i.e. this just provides a "drywell" to replace the volume of the existing open pond). This drywell area is extremely large (say compared to the current pond plan area about 100 feet by 150 feet).

Assume we could find the site area to accommodate such a large drywell, such as under the limestone stockpiles. The cost to excavate a hole about 250 feet square and 8 feet deep (total about 18,500 cubic yards), assuming about $3.50/cy excavation (locally in Portland it ranges from about $2 to $5/cy) and $13.50/cy select drain rock fill (locally in Portland here it ranges from about $12 to $15/cy although Ash Grove may have a less expensive direct source of clean drain rock), and considering the basin for oil and grit removal the total costs approximate $350,000 (these costs are very rough but should give you some idea for economic consideration). Considering the risks of drywell operations and long term operation we feel this solution is impractical and uneconomical and we feel the probability is high that the City will not accept it.

Alternately we can consider a "drywell system" that incorporates buried corrugated metal pipe to increase the total volume capacity. Some sketches of a system that may be applicable to your site are attached. The system with the buried piping is just as functional to Ash Grove, i.e. the site area can be used for stockpiling aggregate or other uses. Rough comparable costs for this system is around $240,000.

Klein also reviewed the recent RZA dewatering report and noted that the soils in the area of the test wells are excellent for a percolation facility whereas those near the existing pond are not. While we have not investigated other areas on the site that may be appropriate for subsurface drywell drainage, using the parameters from the tests wells result in a plan area required around (we have not actually analyzed this option thoroughly) 160 feet by 160 feet. Rough comparable costs for this option is around $225,000.

Since we have committed to locating the new barge access dock in such a location so that it can also service placement of the barge unloading transfer conveyor, the dock "deadmen" are encroaching into the existing pond and something must be done to provide an operable facility.

We suggest you consider the buried pipe system outlined above, or as a minimum, Ash Grove should consider reconfiguring the pond, maintaining the same overall area and volume (and therefor operation) so that the barge access dock can be constructed with the deadmen in secure ground. We can "square-off" and clean up the pond definition. While this does not give Ash Grove usable space in the area of the pond as desired, it may be the most economical an expeditious to assure a functional facility. If we incorporate the buried pipe system or simply reconfigure the open pond, we must submit the revised drainage plan to the City for approval.

Please consider the above comments, we are prepared, and can make Klein available, to meet with you and discuss the matter further.

cc: Ken Rone, Ash Grove Cement West, Seattle
Nate Fernow, Ash Grove Cement West, Seattle
Dan Keppen, Klein Consulting Engineers